

**FEDERAL AID  
ANNUAL RESEARCH PERFORMANCE REPORT**

ALASKA DEPARTMENT OF FISH AND GAME  
DIVISION OF WILDLIFE CONSERVATION  
PO Box 25526  
Juneau, AK 99802-5526

**PROJECT TITLE:** Population dynamics of Interior and Southwest Alaska caribou herds

**PRINCIPAL INVESTIGATOR:** Mark A. Keech

**COOPERATORS:** Ron Squib (FWS, King Salmon, AK) and Andy Aderman (FWS, Dillingham, AK)

**FEDERAL AID GRANT PROGRAM:** Wildlife Restoration

**GRANT AND SEGMENT NR:** W-33-3

**PROJECT NR:** 3.45

**WORK LOCATION:** Game Management Unit 20A

**STATE:** Alaska

**PERIOD:** 1 July 2004–30 June 2005

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**I. PROGRESS ON PROJECT OBJECTIVES SINCE PROJECT INCEPTION**

**OBJECTIVE 1:** Census the Delta Herd annually from 2002 to 2007.

We conducted Delta Herd photo censuses on 24 June 2003 and on 14 July 2004. Results of the censuses indicate that the Delta Herd has probably declined by several hundred animals each of the last 2 years. This is similar to the trend this herd has exhibited over the last 10 years. Weather conditions prevented us from conducting a census during 2005.

**OBJECTIVE 2:** Determine causes and timing of adult mortality caribou in the Delta Herd.

We monitored approximately 61–72 radiocollared short-yearling or older caribou in the Delta Herd from July 2002 to June 2005. The annual survival rates were approximately 85% during the 3 years of the study. Through this reporting period, the majority of the mortality occurred during winter, with wolves being the proximate cause of death for most individuals.

**OBJECTIVE 3:** Monitor movements, distribution, and dispersal of the Delta Herd.

Since July 2002 we have conducted 15 comprehensive radiolocation flights (6 each during the 2002 and 2003 reporting periods and 3 during 2004 reporting period). Movements and

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Please note: This is a progress report and the information contained within may be further analyzed and refined.

distribution of Delta caribou during these years was similar to previous years, with the majority of the herd occupying the northcentral portion of the Alaska Range or the Yanert–upper Wood River valleys. Smaller groups of caribou were located along the eastern edge of Unit 20A and in the northern portion of Unit 13E. Most major concentrations of caribou during annual photo censuses were within the Wood River drainage, with smaller groups in the Yanert River and northern Unit 13E.

**OBJECTIVE 4:** Determine the natality rate and timing of calf production in the Delta Herd.

Natality rate for collared adult Delta caribou was determined during the 3 years of this study and was 69%, 72%, and 80% in spring 2003, 2004, and 2005, respectively. Timing of calf production was not obtained during spring 2003, 2004, or 2005.

**OBJECTIVE 5:** Determine the natality rate and timing of calf production in the Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds.

This project has not assisted in determination of natality rate and timing of calf production in these other herds during spring 2003 through 2005. Natality rate and timing of calf production in the Mulchatna, Nushagak Peninsula, and the Northern Alaska Peninsula herds was determined during these years by Alaska Department of Fish and Game (ADF&G) area offices and federal agency cooperators.

**OBJECTIVE 6:** Determine recruitment in the Delta Herd, Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds.

We completed composition counts on the Delta Herd on 28 September 2002, 6–7 October 2003, and 29 September 2004. Results from the fall 2002–2004 composition counts are similar to previous years. This project did not assist in composition counts on other Alaska herds. ADF&G area offices and federal agency cooperators conducted composition counts on the Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds during 2002–2004.

**OBJECTIVE 7:** Investigate the presence and role of disease in the Delta, Mulchatna, Nushagak Peninsula, and Northern and Southern Alaska Peninsula herds.

During fall 2002, 10 short-yearling caribou were collected from the Mulchatna Herd to necropsy for disease investigation information. No caribou were collected for necropsy from the other study herds in 2002 or from any study herd during the 2003–2005 reporting period for this project. All yearling and older caribou that were captured and released in the Delta, Mulchatna, Nushagak Peninsula, and Alaska Peninsula herds for other aspects of this project had blood drawn to scan for diseases and to store for future analysis.

**OBJECTIVE 8:** Monitor food habits of the Delta, Denali, Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds and periodically monitor winter food habits of other Interior herds.

No fecal samples were taken to monitor food habits of study herds through this reporting period for this project.

OBJECTIVE 9: Monitor body condition and changes in body size and weight in calves and adults, and determine if weight and condition are related to summer and winter weather and recruitment.

During the 2002–2005 reporting period, 45 four-month-old calves (15 each year) were captured in September and October, and 44 ten-month-old calves (15 in 2003, 14 in 2004, and 15 in 2005) were captured in April in the Delta Herd to monitor body condition and body size (no capture mortalities). In addition, during April 2004, 7 adult caribou were captured to replace old radiocollars (one adult caribou was killed by wolves 2 days after capture and was considered a capture mortality), and in April 2005 we captured 4 adult caribou for collar replacement (1 capture mortality). In May 2003 we attempted to capture newborn caribou calves in the Delta Herd but were unsuccessful in obtaining an adequate sample size (no capture mortalities). No newborn caribou calves were captured in the Delta Herd during spring 2004 or 2005.

OBJECTIVE 10: Review literature, prepare annual performance reports, a final report, and manuscripts for publication in refereed literature.

Relevant caribou literature was reviewed through this reporting period. Federal aid research performance reports covering 1 July 2002–30 June 2003 and 1 July 2003–30 June 2004 were written and submitted to federal aid through this reporting period, and have been posted to the ADF&G Web site. No other results from this study were reported or published through this reporting period.

## **II. SUMMARY OF WORK COMPLETED ON JOBS IDENTIFIED IN ANNUAL PLAN THIS PERIOD**

JOB 1: Census the Delta Herd annually from 2002 to 2007.

We conducted a census of the Delta caribou herd in GMU 20A during July 2004.

JOB 2: Determine causes and timing of mortality adult in the Delta herd.

We captured and radiocollared 8 ten-month-old caribou and 4 adult caribou during April 5–7, 2005. There was one adult capture mortality. We retrieved collars from 7 caribou and investigated cause of death.

JOB 3: Monitor movements, distribution, and dispersal of the Delta herd.

We conducted 3 comprehensive and several shorter monitoring and location flights to document movements and distribution of the Delta caribou herd during all months of the year.

JOB 4: Determine the natality rate and timing of calf production in the Delta herd.

We conducted 2 natality flights in May 2005 to estimate natality rate among Delta caribou.

JOB 5: Determine the natality rate and timing of calf production in the Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds.

This job was accomplished by ADF&G area offices and federal cooperators, but no Federal Aid funds from project 3.45 were used to pay for costs associated with this job during this reporting period.

JOB 6: Determine recruitment in the Delta Herd, Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds.

We flew approximately 15 hours using helicopters to estimate population sex and age composition of the Delta Herd. No Federal Aid funds from this project were used to pay for costs associated with the Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds during this reporting period.

JOB 7: Investigate the presence and role of disease in the Delta, Mulchatna, Nushagak Peninsula, and Northern and Southern Alaska Peninsula herds.

We collected blood serum from captured animals during October 2004 and April 2005. Those samples were presented to our staff veterinarian to determine if serum antibodies were present that indicated presence of various diseases.

JOB 8: Monitor food habits of the Delta, Denali, Mulchatna, Nushagak Peninsula, and the Northern and Southern Alaska Peninsula herds, and periodically monitor winter food habits of other Interior herds.

This job was not accomplished during the reporting period. Funds that were allocated for this job were used to help pay for determining the natality rate of the Delta herd.

JOB 9: Monitor body condition and changes in body size and weight in calves and adults, and determine if weight and condition are related to summer and winter weather and recruitment.

We obtained weights and estimated body condition for 15 calves captured during October 2004 and 15 calves captured during April 2005. No capture mortalities (see Section I, Job 9).

JOB 10: Review literature, prepare annual progress reports, a final report, and manuscripts for publication in refereed literature.

The principal investigator prepared this annual progress report.

### **III. ADDITIONAL FEDERAL AID-FUNDED WORK NOT DESCRIBED ABOVE THAT WAS ACCOMPLISHED ON THIS PROJECT DURING THIS SEGMENT PERIOD**

None.

### **IV. PUBLICATIONS**

M. KEECH. 2004. Population dynamics of Interior and Southwest Alaska caribou herds. Alaska Department of Fish and Game. Federal Aid in Wildlife Restoration Research Performance Report. Grant W-33-2. Project 3.45. Juneau, Alaska.

#### **V. RECOMMENDATIONS FOR THIS PROJECT**

None.

#### **VI. APPENDIX**

None.

#### **VII PROJECT COSTS FOR THIS SEGMENT PERIOD**

**Stewardship Investment items purchased:** none

FEDERAL AID SHARE \$43,050 + STATE SHARE \$14,350 = TOTAL \$57,400

#### **VIII. PREPARED BY:**

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#### **SUBMITTED BY:**

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